

THE POWER OF CARING AND FUNDS OF KNOWLEDGE IN TEACHER LEARNING

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This study honors the premise that teaching mathematics meaningfully for diverse learners includes developing *dispositions* and *practices* that draw on children’s “cultural, linguistic, and community-based knowledge” (Turner, Drake, McDuffie, Aguirre, Bartell, & Foote, 2012; p. 68). We propose that supporting practicing and prospective K-6 mathematics teachers (PMTs) as *learners* who utilize their *own* “cultural, linguistic, and community-based knowledge” can authenticate the potential of such opportunities in PMTs’ future work with students. In our poster, we describe such a learning experience for Maya (a practicing, pre-school teacher) and Zoe (a poster author, preservice mathematics teacher, and project researcher), two PMTs in a graduate mathematics education course who were tasked with 3D designing and printing a manipulative that would be used with a child in a problem-solving interview.

We utilize *funds of knowledge* to capture the value of “historically accumulated and culturally developed bodies of knowledge and skills” that are deemed essential for human functioning and well-being (Moll, Amanti, Neff, & Gonzalez, 1992; p. 132). Noddings (2010) illuminates how a *relational sense of caring* that is “receptive” to “what the cared-for is feeling” (p. 2) can create an authentic space for sharing funds of knowledge during learning, which occurred when Zoe embraced Maya’s experiences growing up in the Dominican Republic (DR).

This case is part of a larger teacher education study to help understand PMTs’ knowledge development as they Make manipulatives (blinded). Data includes videos from design sessions and written assignments, *and* the tools, because a manipulative’s design reflects the intentions and understandings of the Maker(s) (Pratt & Noss, 2010). Purposeful sampling (Patton, 2002) for an exploratory case study (Yin, 2009) helped us analyze how funds of knowledge connected to the design and use of Maya and Zoe’s tool, called *No Más Caídas (No More Spills)*.

Maya and Zoe hoped *No Más Caídas* would make counting playful—a trait they viewed as fading from K-6 activities. As Maya articulated anxieties over the intricacies of the design process, Zoe invited her to share her experiences learning mathematics as a child in the DR. At first, Maya was reluctant, deeming her lived experiences as irrelevant, but as the PMTs engaged in and out of class, a *confianza* (mutual trust) (González, Moll, & Amanti, 2005) developed that informed the design of their tool and their learning. For example, they opted for marbles as their counting objects, to connect to the everyday objects children use to count in the DR (like beans and rocks). Also, Maya invited her pre-school age daughter for the final interview with their tool, integrating the funds-of-knowledge focus on family (Moll, et al., 1992). To her delight, Maya discovered her daughter’s mathematical capabilities with the tool exceeded her expectations, writing “*trabajando con números más grande a los que ella estaba acostumbrada, más su alegría y dedicación al usar nuestra herramienta favoreció nuestra entrevista.*”

Providing PMTs funds-of-knowledge learning opportunities can offer a transitioning vehicle between the teacher education setting and the PMTs’ own classrooms. In our poster, we share these and additional funds of knowledge from Maya and Zoe’s experiences, relaying their power in the PMTs’ learning, and promoting PME-NA’s goal to support the “ample diversity of ways of teaching and learning mathematics” (PME-NA, 2020).

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